The Impact of Race at Multiple Stages of the Juvenile Justice Process: A Multinomial Analysis of Outcomes

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Purpose and Scope: Overview

- Examine whether race influences juvenile justice processing decisions in WV.
- Racial disparity = when similarly situated youth of different racial and ethnic backgrounds receive unequal treatment or dispositions.
- Assess role of race at multiple stages of the JJ process.
- Conduct a multivariate analysis to control for the effects of relevant legal and extra-legal characteristics.
- Use unique statistical approach in this assessment – multinomial logistic regression.

Multinomial Logistic Regression

- Represents an improvement over previous model specifications that used ordinary or binary logistic regression techniques.
- Allows for multiple outcomes to be examined simultaneously at each stage of the juvenile justice process.
- Is better able to account for the diverse set of options and processes at each stage.
- We also explore interaction effects that can obscure potential racial differences in disposition outcomes.

Considerations for Analysis: Lessons Learned

1. Studies should employ multivariate statistical techniques which offer the capacity to control for relevant legal and extra-legal variables that may potentially influence processing decisions.

2. Achieve proper specification of the multivariate models at each stage of the process.

Proper model specification requires:

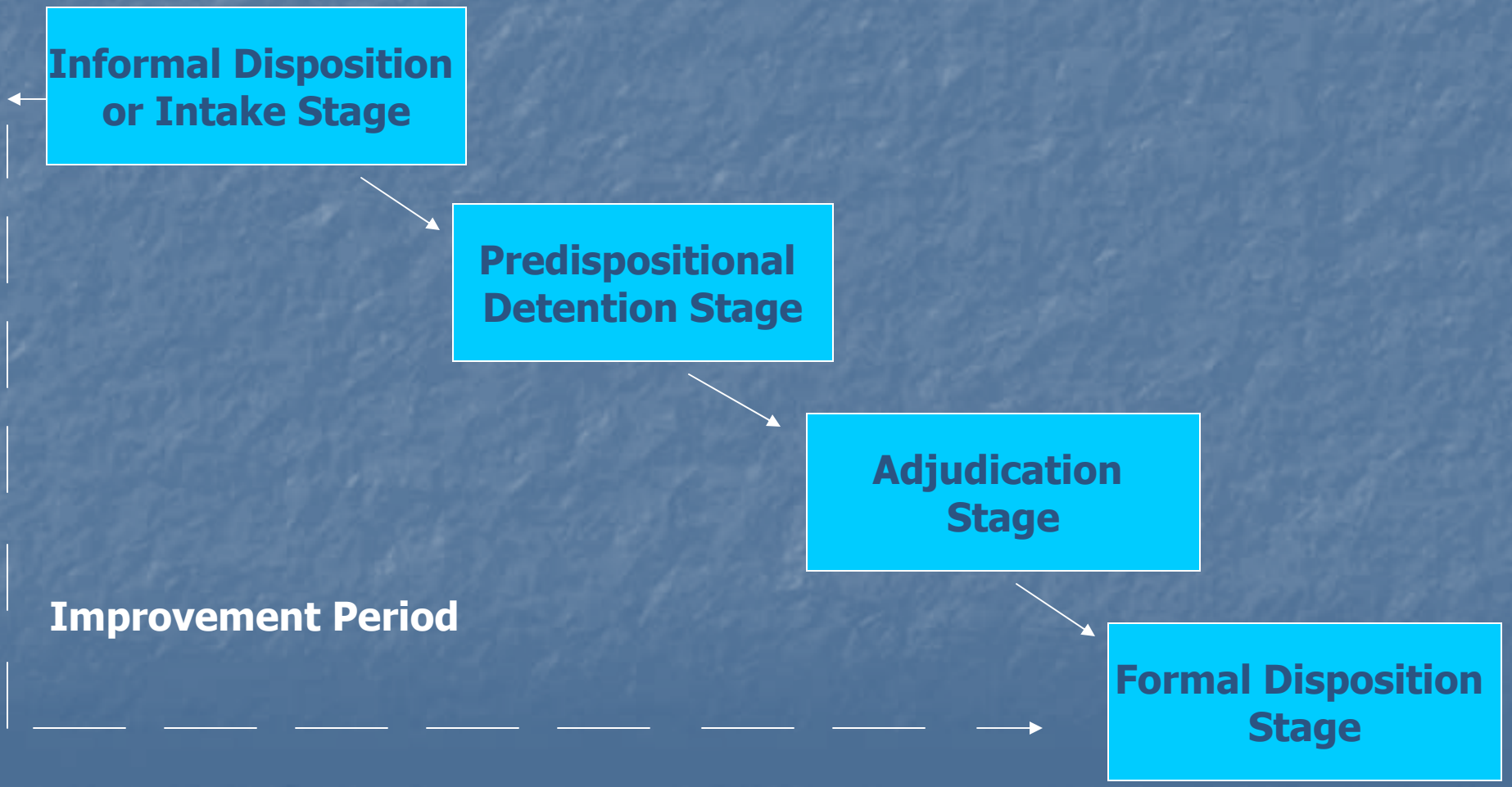
- An accurate depiction of the actual juvenile process.
- A complete representation of the alternatives available for decision-makers at each stage of the process.

Considerations for Analysis: Lessons Learned

3. Since decisions at earlier stages of the juvenile process can influence outcomes at later stages, the impact of race should be estimated at multiple stages.
   - A single stage analysis at late stages in the process may not necessarily uncover race differences that occurred at the intake or predispositional detention stages.
   - A multistage analysis also allows for the discovery of potential indirect effects of race on outcomes.

4. Research should consider the possibility that the effect of race might be conditioned by other variables.
   - Influence of race may be contingent upon: offense severity, prior record, gender, or age.

WV Juvenile Justice Process: Key Decision Points



WV Juvenile Justice Process: Options and Outcomes

Informal Disposition or Intake Stage

- No Informal Disposition
- Case Closed or Complaint Withdrawn
- Referral to Community Agency or DHHR
- Probation Diversion and/or Informal Probation Supervision

Predispositional Detention Stage

- No Predispositional Detention
- Home Confinement and Non Secure
- Staff Secure
- Detention Center

WV Juvenile Justice Process: Options and Outcomes

Adjudication Stage

- Case Dismissed
- Adjudicated Not Status Offender or Delinquent
- Adjudicated as Status Offender
- Adjudicated as Delinquent

Formal Disposition Stage

- Improvement Period (or lesser)
- DHHR Referral or Custody
- Probation
- DJS Custody or Adult Transfer

Research Questions

1. Are nonwhite juveniles more likely to receive a negative outcome at different stages of the juvenile justice process? If so, at which stage of the juvenile justice process are nonwhites most likely to receive negative outcomes?

2. Controlling for legal (e.g., prior record, current offense, and detention status) and extralegal (e.g., gender and age at intake) characteristics, is race an important predictor of disposition outcomes at multiple stages of the juvenile process?

Data Collection

- Juvenile Probation Database (JPDB)
- JPDB is the primary source of data gathered on juvenile offenders referred to the juvenile justice system in West Virginia.
- Gathers information on cases rather than individuals – so we restructured database around individuals.
- Restricted our analysis to the last referral in 2002.
- Final sample comprised 12,561 individual youth between 7 and 18 years old referred to juvenile probation between the period of January 1, 2000 and December 31, 2002.
- Whites = 11,073, 88.2%; Nonwhite = 1,171, 9.3%; Unknown = 317, 2.5%

Characteristics of Youths Referred to Juvenile Probation

- Males represent two-thirds (65.5%) of all youth referred to juvenile probation.
- The mean ages for juveniles at the time of the offense and at the time of intake were 15.39 and 15.46.
- Over sixty percent (61.2%) of all youth were enrolled in a mainstream educational setting.
- A majority of youths (75.7%) lived with at least one biological parent at the time of referral to juvenile probation.

Characteristics of Youths Referred to Juvenile Probation

- A greater proportion of nonwhite youths were:
  - Younger at referral
  - Living in single parent homes, and
  - Enrolled in alternative forms of education.
- Fewer than 10% of all youth had a legal history of any kind (arrests, referrals, adjudications, etc.)
- A greater percentage of nonwhite youth had:
  - a prior arrest
  - a prior adjudication for a delinquency offense
  - a prior sentence of probation
  - a prior complaint history

Multinomial Logistic Regression: Interpretation

- Multinomial logistic regression compares multiple groups – in this case different disposition outcomes at each stage – through a combination of binary logistic regressions.
  - For example, compares "No predispositional detention" (the reference category) to "Home confinement/nonsecure" and "Staff secure" and "Detention center" at the same time, but separately.
- For each pair of disposition outcomes, multinomial regression provides a set of regression coefficients.
- Each regression equation or model can be used to compute the odds (and probability) that a particular disposition outcome will occur for each youth characteristic.

Multinomial Logistic Regression: Interpretation

- The interpretation of regression coefficient (*b*) is based on its ability to distinguish between:
  - receiving each disposition outcome and
  - the contribution it makes for changing the odds of receiving one disposition rather than another.

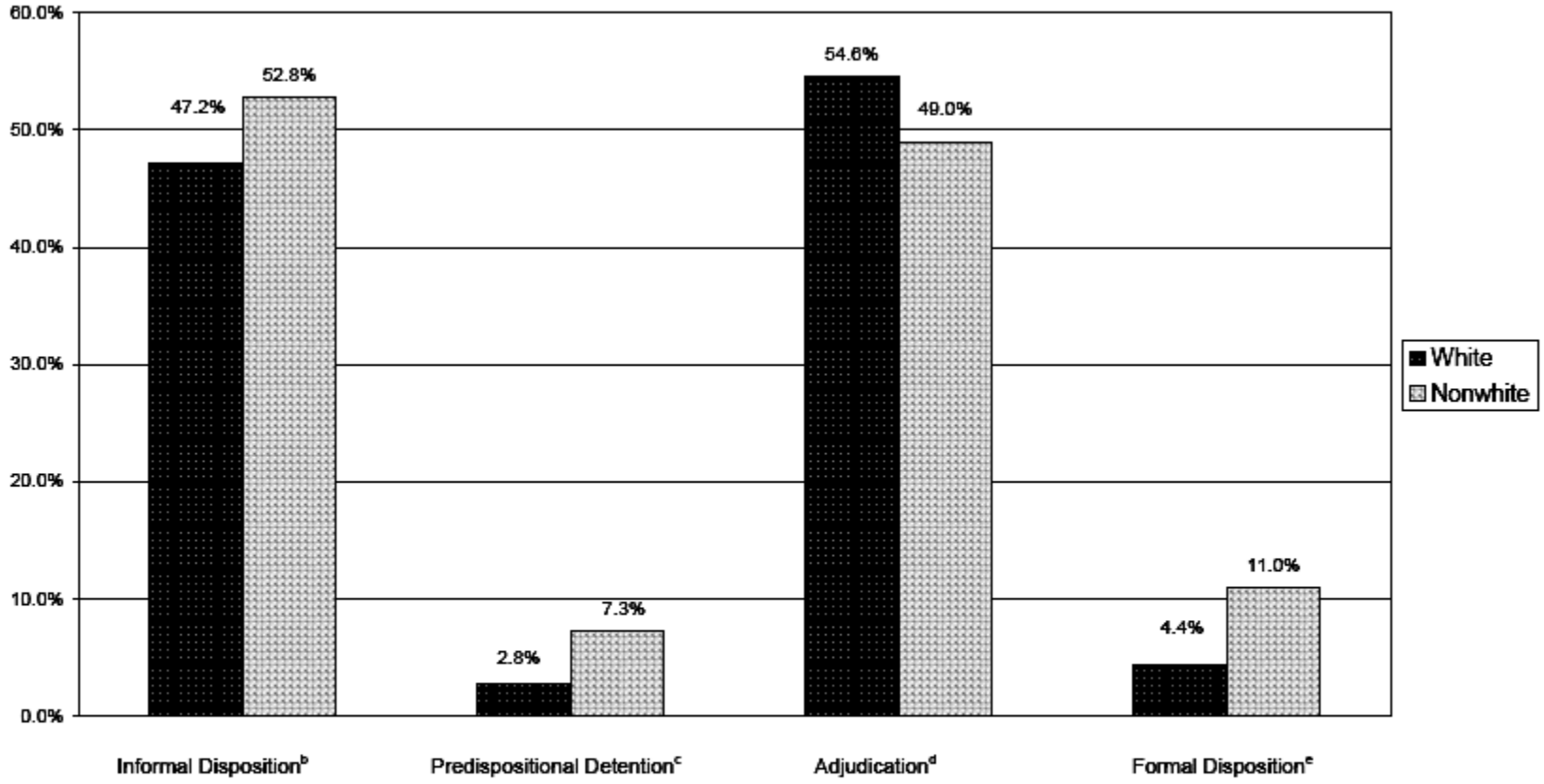
- Odds are based on a comparison of the probability of receiving a disposition outcome to the probability of not receiving that particular outcome.

Results

Research Question #1

1. Are nonwhite juveniles more likely to receive a negative outcome at different stages of the juvenile justice process? If so, at which stage of the juvenile justice process are nonwhites most likely to receive negative outcomes?

Figure 1: Proportions receiving more severe processing outcomes within racial categories[a]



Note: This figure represents the juvenile justice system as a series of dichotomous decision-making points and depicts the relationship between race and each processing outcome, comparing the proportions of white and nonwhite youths receiving the most severe treatment at each stage.

a. Cases with missing information or reported as "unknown" or "other" are excluded from this analysis.

b. Most severe outcome is "no informal disposition."

c. Most severe outcome is predispositional detention in a secure juvenile detention center.

d. Most severe outcome is adjudicated as status offender and/or deliquent by trial or plea.

e. Most severe outcome is sentenced to DJS custody or transferred to adult court.

Research Question #2

2. Controlling for legal (e.g., prior record, current offense, and detention status) and extralegal (e.g., gender and age at intake) characteristics, is race an important predictor of disposition outcomes at multiple stages of the juvenile process?

Table 11: Multinomial logistic regression analysis for race and controls at the informal disposition stage – main effects model (N = 11,966)[a]

	No Informal Disposition versus[b]								
	Case Closed Complaint Withdrawn[d]			Referral to Community Agency or DHHR			Probation Diversion/Informal Probation Supervision		
	b	Odds Ratio	*p*	*b*	Odds Ratio	*p*	*b*	Odds Ratio	*p*
Demographic Factors[c]									
Race	.195	1.215	.011	-.186	.830	.136	-.363	.696	.001
Gender	-.440	.644	.000	-.380	.684	.000	-.364	.695	.000
Age at Intake	-.063	.939	.000	-.088	.916	.000	-.056	.946	.000
Legal Factors									
Prior Record	-.216	.806	.000	-.383	.681	.000	-.466	.627	.000
Current Offense	-.301	.740	.000	-.497	.608	.000	-.266	.766	.000
Model χ^2, 15*df*	1534.65		.000						

Note: Percentage of juveniles in the case closed-held open group (24.7%), referral to community agency or DHHR group (10.3%), probation diversion or informal probation supervision group (16.4%), no informal disposition group (48.8%).

a. Cases with missing information or "other" are excluded from the analysis.
b. Reference category is "no informal disposition."
c. Reference group for race is "white", and for gender, the reference category is female.
d. Includes cases closed or complaint withdrawn/resolved, and held open without further action.

Table 12. Multinomial logistic regression analysis for race and controls at the informal disposition stage – interaction model (N = 11,966)[a]

	No Informal Disposition versus[b]								
	Case Closed Complaint Withdrawn[d]			Referral to Community Agency or DHHR			Probation Diversion/Informal Probation Supervision		
	b	Odds Ratio	*p*	*b*	Odds Ratio	*p*	*b*	Odds Ratio	*p*
Demographic Factors[c]									
Race	.693	2.000	.001	.662	1.863	.045	.211	1.235	.422
Gender	-.426	.653	.000	-.383	.682	.000	-.342	.710	.000
Age at Intake	-.064	.938	.000	-.089	.914	.000	-.056	.946	.000
Legal Factors									
Prior Record	-.202	.817	.000	-.362	.696	.000	-.458	.633	.000
Current Offense	-.292	.747	.000	-.476	.621	.000	-.258	.722	.000
Interactions									
Race x Gender	-.145	.865	.370	.047	1.048	.858	-.298	.742	.170
Race x Prior Record	-.097	.908	.124	-.233	.792	.147	-.080	.923	.516
Race x Current Offense	-.114	.893	.039	-.305	.737	.004	-.114	.893	.132
Model χ^2, 24*df*	1553.37		.000						

Table 13: Multinomial logistic regression analysis for race and controls at the predispositional detention stage – main effects model (N = 11,708)[a]

	No Predispositional Detention versus[b]								
	Home Confinement and Non Secure			Staff Secure			Detention Center		
	b	Odds Ratio	*p*	*b*	Odds Ratio	*p*	*b*	Odds Ratio	*p*
Demographic Factors[c]									
Race	-.095	.909	.737	-.070	.932	.834	.860	2.363	.000
Gender	.207	1.230	.257	-.299	.742	.154	.373	1.452	.006
Age at Intake	.097	1.102	.033	.025	1.025	.641	.310	1.364	.000
Legal Factors									
Prior Record	.219	1.245	.000	.277	1.320	.000	.332	1.394	.000
Current Offense	.125	1.133	.009	.195	1.215	.001	.474	1.607	.000
Model χ^2, 15*df*	675.97		.000						

Note: Percentage of juveniles in the no predispositional detention group (94.4%), home confinement and non secure group (1.3%), staff secure group (0.9%), detention center group (3.4%).

a. Cases with missing information or reported as "unknown" or "other" are excluded from the analysis.
b. Reference category for predispositional detention status is "no predispositional detention."
c. Reference group for race is "white", and for gender, the reference category is female.

Table 15: Multinomial logistic regression analysis for race and controls at the adjudication stage – main effects model (N = 2,610)[a]

	Case Dismissed versus[b]								
	Adjudicated Not Status Offender or Delinquent			Adjudicated as Status Offender			Adjudicated as Delinquent[c]		
	b	Odds Ratio	*p*	*b*	Odds Ratio	*p*	*b*	Odds Ratio	*p*
Demographic Factors[d]									
Race	-.615	.541	.001	-.675	.509	.014	-.572	.564	.001
Gender	.252	1.287	.074	-.203	.817	.223	.340	1.405	.011
Age at Intake	-.035	.966	.345	-.181	.835	.000	-.059	.943	.091
Legal Factors									
Prior Record	-.112	.894	.014	-.261	.770	.000	.115	1.122	.004
Current Offense	.036	1.036	.294	-.588	.556	.000	.035	1.035	.281
Detention Status[e]	1.327	3.769	.000	1.188	3.280	.000	1.059	2.884	.000
Model χ^2, 18*df*	425.51		.000						

Note: Percentage of juveniles in the, dismissed group (16.0%), adjudicated NOT status offender or delinquent group (29.5%), adjudicated as status offender group (11.8%), adjudicated as delinquent group (42.7%).

a. Cases with missing information or reported as "unknown" or "other" categories are excluded from the analysis.
b. Reference category is "case dismissed." Includes cases dismissed at preliminary hearing, with and without prejudice.
c. ncludes adjudicated as delinquent by plea or by trial.
d. Reference group for race is "white", and for gender, the reference category is female.
e. Reference group is "no predispositional detention."

Table 16: Multinomial logistic regression analysis for race and controls at the adjudication stage – interaction model (N = 2,610)[a]

	Case Dismissed versus[b]								
	Adjudicated Not Status Offender or Delinquent			Adjudicated as Status Offender			Adjudicated as Delinquent[c]		
	b	Odds Ratio	*P*	*b*	Odds Ratio	*p*	*b*	Odds Ratio	*p*
Demographic Factors[d]									
Race	.502	1.652	.309	-1.100	.333	.095	-.014	.986	.976
Gender	.274	1.315	.070	-.170	.844	.334	.389	1.475	.007
Age at Intake	-.036	.964	.328	-.178	.837	.000	-.060	.942	.085
Legal Factors									
Prior Record	-.123	.885	.015	-.265	.767	.001	.118	1.226	.007
Current Offense	.068	1.070	.064	-.609	.544	.000	.046	1.047	.192
Detention Status[e]	1.449	4.258	.000	1.184	3.268	.000	1.150	3.159	.000
Interactions									
Race x Gender	-.053	.948	.901	-.229	.796	.695	-.360	.698	.360
Race x Detention Status	-.557	.573	.292	.503	1.653	.469	-.264	.768	.593
Race x Prior Record	.061	1.063	.606	-.001	.999	.997	-.032	.969	.755
Race x Current Offense	-.284	.753	.007	.221	1.247	.195	-.063	.939	.509
Model χ^2, 30*df*	445.76		.000						

Note: Percentage of juveniles in the, dismissed group (16.0%), adjudicated NOT status offender or delinquent group (29.5%), adjudicated as status offender group (11.8%), adjudicated as delinquent group (42.7%).

a. Cases with missing information or reported as "unknown" or "other" categories are excluded from the analysis.
b. Reference category is "case dismissed." Includes cases dismissed at preliminary hearing, with and without prejudice.
c. Includes adjudicated as delinquent by plea or by trial.
d. Reference group for race is "white", and for gender, the reference category is female.
e. Reference group is "no predispositional detention."

Table 17: Multinomial logistic regression analysis for race and controls at the formal disposition stage – main effects model (N = 3,588)[a]

	Improvement Period versus[b]								
	DHHR Referral/Custody			Probation[c]			DJS Custody/Adult Transfer		
	b	Odds Ratio	*p*	*b*	Odds Ratio	*p*	*b*	Odds Ratio	*p*
Demographic Factors[d]									
Race	-.299	.742	.203	.115	1.122	.407	.769	2.158	.002
Gender	-.186	.830	.112	.235	1.265	.009	.847	2.332	.001
Age at Intake	-.061	.941	.046	.091	1.095	.000	.484	1.623	.000
Legal Factors									
Prior Record	.265	1.303	.000	.308	1.360	.000	.453	1.573	.000
Current Offense	-.453	.636	.000	.133	1.142	.000	.266	1.305	.000
Detention Status[e]	2.094	8.121	.000	1.548	4.700	.000	2.647	14.118	.000
Model χ^2, 18*df*	870.38		.000						

Note: Percentage of juveniles in the improvement period group (49.1%), DHHR referral/custody group (12.2%), DJS custody/adult transfer group (4.8%), and probation group (33.9%).

a. Cases with missing information or reported as "unknown" or "other" are excluded from the analysis.
b. Reference category is "improvement period," also includes a period of monitored compliance, community service, and fine/restitution.
c. Includes all forms of probation such as noncustodial, DHHR custody and probation, home confinement and probation.
d. Reference group for race is "white", and for gender, the reference category is female.
e. Reference group is "no predispositional detention."

Conclusions: Overview

- Regardless of race, the frequency and severity of a youth's prior record and the severity of a youth's current offense were significant predictors of disposition outcomes at each stage of the juvenile justice process.
- For many outcomes and at multiple stages, a youth's age and gender were significant predictors. Older males were typically treated more harshly at each stage of the process.
- Nonwhite youths were significantly more likely to receive harsher dispositions at the informal disposition, predispositional detention, and formal disposition stages.

Conclusions: Overview

- At the predispositional detention stage, nonwhite youths have greater than 2 to 1 odds of being detained prior to adjudication in a detention center compared to white youths.
- Nonwhite youths were significantly more likely to have their cases simply dismissed at the adjudication stage.
- At the formal disposition stage, nonwhite youths were nearly twice as likely to be sentenced to a secure corrections facility.

Conclusions: Overview

- Regardless of race, youths detained prior to adjudication were:
  - Over *eight times* more likely to be referred to DHHR or placed in DHHR custody;
  - Over *four times* more likely to be sentenced to probation; and
  - over *fourteen times* more likely to be placed in DJS custody or transferred to adult court.
- Since nonwhite youth were more than twice as likely to be detained prior to adjudication, we can conclude that race is likely to have a significant indirect effect on case outcomes at the adjudication and formal disposition stages.

Implications

- Need objective criteria at the earliest points in the process – prior to detention decision.
- Need a closer examination of the youth and case characteristics that are dismissed at the adjudication stage.
- Should seek to better understand the differences in levels of risk and the types of needs that distinguish white and nonwhite youths referred to the system -- AND how to deliver services that target these needs.
- Understand how risk and need differences influence the judgments of key stakeholders.